DOCUMENT RESUME

ED 159 321 **CE 015 938**

AUTHOR	McClain, Thomas W., Ed.
TITLE	Towards Better Methods of Labor Market Analysis for Educational and Training Program Planning.
INSTITUTION	Boston Univ., Mass. Regional Manpower Inst. on Employment Policy.; Massachusetts Univ., Amherst. Inst. for Governmental Services.
SPONS AGENCY	Massachusetts State Dept. of Education, Boston. Div. of Occupational Education.
PUB DATE	Sep 77
NOTE	45p.; Photographs may reproduce poorly
EDRS PRICE	MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS	Community Characteristics; Data Analysis; Data Collection; Demonstration Programs; Employment Patterns; Employment Projections; Employment Trends; Food Service Industry; Information Sources; Job Market; Labor Force; *Labor Market; *Labor Supply; *Manpower Needs; Program Planning; *Research Methodology; Resources; Secondary Education; *Trend Analysis; *Vocational Education
IDENTIFIERS	Hampshire Educational Collaborative MA; Regional Manpower Institute MA

ABSTRACT

This booklet for educational and training planners is designed to increase understanding of labor market processes and thus to improve vocational education planning. As model illustrations, two local Massachusetts projects are described. The Worcester model, presented in chapter 1, is used by Boston University's Regional Manpower Institute to focus on high school graduates' transition from school to work. Data analysis is advised to determine local labor market trends, community uniqueness, baseline patterns, etc. The U.S. Census, Bureau of Labor Statistics, school records, and employer interviews are cited as useful resources. Chapter 2 presents research methods used by the Hampshire Educational Collaborative. It is suggested that forecasting models include demand and supply information, sufficient job details, and changing technology considerations. Data gathering methods and steps for developing an interfacial manpower picture are discussed. Steps listed include obtaining demand and supply analyses, student needs survey, employment history, and program evaluation. There are four appendixes. The first contains a detailed sample forecast study for a high school vocational food preparation/service training program. Other appendices are an annotated list of published labor market analysis resources, a glossary of terms, and a brief report of an Amherst food service telephone survey. (CSS)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED159321

TOWARDS BETTER METHODS OF LABOR MARKET ANALYSIS FOR EDUCATIONAL AND TRAINING PROGRAM PLANNING

Thomas W. McClain, Ed. D.
Project Director/Editor

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Inst. for Gov't. Services/Univ. of Mass

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

in cooperation with the

Regional Manpower Institute on Employment Policy
Boston University

and

Saul A. Rigberg
Hampshire Educational Collaborative

CE 015 938

September 1977

Towards Better Methodology Labor Market Analysis for Educational and Training Program Planning is a publication of the Institute for Governmental Services (IGS), University of Massachusetts.

This publication was prepared as a part of the Commonwealth Colloquium Project: Building New Bridges Between the Worlds of Education and Work. Funding for this project was made possible through a grant from the Massachusetts State Department of Education, Division of Occupational Education.

The opinions expressed in this publication do not necessarily reflect the position or policy of the Institute for Governmental Services.

© Copyright 1977, Institute for Governmental Services (IGS)

A Publication of the Institute for Governmental Services (IGS)
University of Massachusetts

Maurice A. Donahue, Director
Arthur W. Eve, Associate Director
Dimitri V. Gat, Editorial Associate

Occupational Education Services Staff

Thomas W. McClain, Director
Edward B. Feder, Staff Associate for Coordination
J. Leslie Firth, Coordinator for Career Education
Richard R. Caples, Coordinator for Correctional Programs
Roger Peck, Consultant, Urban Occupational Instructor Development
Candace L. Bancroft, Research Associate
Tibby Chase, Research Associate
Rima Miller, Research Associate
Richard A. Sockol, Research Associate
Charles L. Weinert, Research Associate
Carolyn Hansma, Office Manager/Boston
Barbara E. Llamas, Secretary

Cover Design: Dave Coburn

Middlesex House
University of Massachusetts
Amherst, MA 01003

Downtown Office
100 Arlington Street
Boston, MA. 02125

TABLE OF CONTENTS

		Page
PREFACE		v
CHAPTER I:	A METHODOLOGY FOR LOCAL LABOR MARKET ANALYSIS	1
	I. Introduction	1
	II. The Uses of Data: A Place to Begin.	2
	III. Estimating Labor Supply.	4
	IV. Labor Market Processes	6
	V. Conclusions.	7
CHAPTER II:	A PRACTICAL GUIDE FOR CONDUCTING LABOR MARKET RESEARCH.	9
	I. Introduction	9
	II. Methods.	10
	III. Developing a Comprehensive Manpower Picture.	13
	A. Labor Demand	13
	B. Labor Supply	14
	C. Student Needs Survey	14
	D. Employment History	14
	E. Using Manpower Needs Data in Evaluating Occupational Education Programs.	14
	IV. Concluding Remarks	14
APPENDIX I:	SAMPLE FORECAST STUDY: FOOD PREPARATION AND SERVICE.	17
	I. The Food Service Industry.	17
	II. National Trends.	18
	III. State Trends	20
	IV. Regional and Local Trends.	22
	V. Amherst Area Employment Opportunities.	23

Table of Contents (continued)

CHAPTER III (continued)		Page
	VI. Concluding Remarks	23
APPENDIX II:	PUBLISHED RESOURCES FOR LABOR MARKET ANALYSIS	25
	I. Federal Publications	25
	II. State Publications	25
	III. Useful Publications for Background Knowledge	28
APPENDIX III:	GLOSSARY OF TERMS	31
APPENDIX IV:	AMHERST AREA FOOD SERVICE EMPLOYMENT OPPORTUNITIES: A Telephone Survey	35

PREFACE

Young people and adults in an ever growing and changing society are faced with the difficult task of choosing sound career plans from among the hundreds of alternatives. Likewise, manpower planners and occupational education administrators are called upon to design and develop training programs based upon realistic job placement opportunities. Thus, both the job seeker and service provider must act upon a knowledge base that leads to promising employment opportunities.

The knowledge base for realistic and promising employment opportunities begins with reliable labor market analysis. More and more local planners of educational and training programs are being required to validate the programs they espouse. Unfortunately, the methodology to gather this evidence has been lacking except for rather sophisticated econometric models employed by the Bureau of Labor Market Statistics, Department of Labor, and other professionals somewhat isolated from daily planning decisions.

The intent of this publication is to begin to break down the mystery of labor market planning by illustrating several models that have been employed in Massachusetts at the local level.

The first model is one employed in the Worcester area by the Regional Manpower Institute at Boston University. Much of the Institute's philosophy is based around the premise of being an investigative reporter attempting to verify some assumptions gleaned from other sources of published data such as the U. S. Census and State Division of Employment Security information.

A second sample methodology is presented by Saul Rigberg of the Hampshire Educational Collaborative. Proceeding on limited funding and time, Mr. Rigberg illustrates the "investigation" approach utilized for documenting the need for a specific public school program in the area.

To round out the publication in order to make it as useable as possible, a glossary of terms and an annotated bibliography of published resources is included. Hopefully, this will provide a practical addition for local researchers.

Sincere appreciation is expressed to Hugh Smith of the Regional Manpower Institute on Employment Policy and to Saul Rigberg for their help in making this publication possible.

I would also like to thank the State Department of Education, Division of Occupational Education, for their support of the Commonwealth Colloquium Project on education and work which made this undertaking possible.

Thomas W. McClain, Ed. D.
Project Director, Editor

CHAPTER I

A METHODOLOGY FOR LOCAL LABOR MARKET ANALYSIS

Prepared by

The Regional Manpower Institute on Employment Policy[1]

I. Introduction

The most important change in the federally-funded manpower training system, adopted with the passage of the Comprehensive Employment and Training Act in 1973, was the decentralization of responsibility for planning and administering these programs to local units of government. Since public education in the United States traditionally has been locally controlled, this change in manpower policy offered the opportunity of coordinating the two systems for increased responsiveness in meeting the educational and training needs of individual communities.

However, this end has been seriously hampered by the difficulty in obtaining the kinds of detailed information about specific local labor markets that planners need to design good programs. Much of the key information is not obtainable from any published sources. For example, while it is possible to obtain statistical information on the number of people who migrate into and out of a specific area, it is much more difficult to determine the kinds of education and skills these individuals have. It is very difficult to determine what should be the planner's response to any forecasted occupational demand for a local area, if it is not known how large the latent pool of qualified workers is, or how many people holding these skills are leaving the area.

The demand side of local labor markets is likewise characterized by a high degree of openness. Published occupational forecasts are derived from extrapolation of observed trends. Yet those forecasts are highly susceptible to distortion as individual firms make their own decisions to expand, contract, move in or move out. Such information is not available from any published source. Even the kinds of firms a community possesses is important to a planner. Firms in different industries are growing at different rates; and they offer very different kinds of occupations, with different educational and training requirements for local workers. The specific industrial mix in a local community relates directly to wages and working conditions, and even to the relative sensitivity of the local economy to fluctuations in the national business cycle.

Moreover, not only do planners need to know what their local economy is like, but even how specific firms function. What are the entry-level jobs, what educational and training requirements do they have, and how are they filled? What are the upper level positions on the internal job ladder, and how are they filled? What skills should a program graduate have to obtain the first job, and what skills will he need to

---

1. *The Regional Manpower Institute on Employment Policy is located at Boston University, 270 Baystate Road, Boston, Massachusetts 02215 (617) 353-4447.*

advance? What does the employer mean by "skill" and "experience" and how are these obtained? What kinds of training programs do employers themselves run?

All of these considerations are extremely important for program planners and are matters that should be proLed through intensive, carefully focused analysis. Hopefully, the information included in this publication will allow even the untrained reader to undertake such a study.

In 1975, the Boston University Regional Institute on Employment Policy undertook a pilot project in Worcester, Massachusetts, with the intent of designing and testing methods for obtaining and analyzing detailed information on a local labor market which could be used by planners of educational and training programs. This paper presents a very brief description of these methods which were reported to a conference organized by the University of Massachusetts' Commonwealth Colloquium Project in January of 1977.[2]

II. The Uses of Data: A Place to Begin

An effective planning process for local educational and training programs is a continuous process, and essentially one of developing refined approximations of labor market patterns and changes. There is no technique and no data source that will precisely identify spot openings. But careful data analysis can provide an essential foundation for good local planning. It can (1) help to identify important trends in the local labor market and define ways in which the economy of a specific community differs from other cities in the same region; (2) provide an invaluable bench mark for tracing patterns of development in the local labor market over time; and (3) serve as the basis for defining important questions to pursue with local employers, and begin a continuous planning dialogue between them and education and training program officials.

In attempting to develop these methods for local labor market planning, the B. U. Regional Institute elected to use the most commonly available data sources and straightforward techniques of analysis so that they would be useful to any community. To implement these methods requires neither the aid of highly trained specialists nor elaborate computer technology.

Three volumes of the U. S. Census were used extensively for the first step in the planning process: Population Characteristics, General Social and Economic Characteristics, and Detailed Characteristics. From these sources, using simple hand calculations, it is possible to address such matters as the size and characteristics of the local population, rates of change, and labor force composition by age, sex, and race. Furthermore, these materials can yield much information on trends

---

2. *For sake of brevity, only a few results of the project are presented here. A copy of the complete study, Education, Training, and Employment in Worcester, can be obtained by writing to the Boston University Regional Institute, 270 Bayestate Road, Boston, MA 02115*

in industries and occupations, staffing patterns by industry, and the age and sex structure of employment by industry.

The major utility of this information may derive from the questions it raises. For example, if the population is growing or declining, one would like to know why. Likewise, what are the casual factors behind a rapid increase in the minority population, or a sudden change in the labor force participation of women, of teenagers? How has the local industrial mix changed over time, and how has that affected the kinds of jobs now available in the community, who holds those jobs and what kinds of education or skill requirements are needed to perform them? These are the kinds of issues one can begin to address through focused discussions with employers, trade union officials, educators, and local political and civic leaders. Doing the data analysis before asking questions, however, means that the subsequent inquiries are more fruitful, and may help to bring issues to light which were not widely perceived earlier.

The second major source of data which can be mined for information on the local labor market are the research publications of the Bureau of Labor Statistics and the State Employment Security Agency. These publications serve to augment the Census data as they are much more detailed, more current, and provide information of the characteristics of the insured unemployed in the local labor market.[3]

A careful analysis of the unemployed is valuable for determining possible programs for educational and training programs. If it is discovered that the essential problem is "frictional"--that adequately qualified workers are having trouble locating existing openings--then steps can be taken to improve matching of workers and jobs. If the problem is basically "structural"--the pool of workers is unqualified for the jobs available--then programs can be devised to equip them with the new skills needed to match the new jobs. If the problem is an excess of workers compared to openings--a problem of insufficient demand--then the appropriate response would revolve around trying to create new jobs.

The next major step in data analysis is to try to estimate where the local economy is going. Industrial and occupational forecasts are available from the Bureau of Labor Statistics for many areas.[4] These forecasts are derived from calculations of expected rates of growth in

---

3. *The five principal sources used were the Employment Review and Employment and Wages in Establishments by Major Industry Divisions, which provide information on employment in non-agricultural industries, the Occupational Characteristics of Insured Unemployed and Employment Service Automated Reporting System (ESARS), which provide information on the unemployed, and the Occupational Employment Survey (OES), which furnishes information on the occupational mix of various industries. More complete descriptions of these and other useful publications appear in the Appendix.*

4. *Unfortunately, the Bureau of Labor Statistics confines its activities to urban areas. Rural labor areas are generally ignored or subsumed under an urban area, which tends to color any forecasts or statistics. (Editor)*

a variety of industries, and coupled to a matrix of staffing patterns according to these industries, it is possible to extrapolate expected changes in specific occupations. These are broken down into two groups: openings attributable to replacement, which are computed with working life tables to estimate retirements and deaths in the current work force, and openings due to growth. Growth estimates are the least accurate, because the results hinge upon assumptions about the future course of the economy, and can be upset by unforeseen national and international events.

While these projections must necessarily be used with caution, they are extremely useful. The can indicate an unexpected, and perhaps otherwise undetected, backlog of replacements which may have to be met in the short-term future, and can be instrumental in bringing employers and educators together to begin to plan a course of action to meet these demands. Growth forecasts can give some estimate of where the economy is headed, given several basic assumptions, and can serve to signal to educators where the emerging occupations are likely to be. However, several points should be borne in mind in using growth forecasts.

To begin with, many of the listed openings will have limited significance for educational and training program planners, as they represent openings which may be filled internally by firms promoting current workers. Consequently, it is important to use them as guides for learning more about the job ladders which exist in local firms in order to get a clear idea what the actual entry level positions will be for new graduates, and focus educational and training efforts on equipping young workers to qualify for the first rung. Secondly, the forecasts need to be tested by contacts with local employers in each specific industry. Unexpected developments in the community or in the economy can rapidly overturn these forecasts, and these developments are usually detected early by people who work in the field. Finally, they should be treated as indicative of trends and not a precise forecast of openings. A sharp increase in demand for certain occupations may result in heavy in-migration of workers, or a shift of current workers from one occupation to another. Nevertheless, a forecast of long term trends is useful in that it can provide educational planners with the lead time needed to plan curricula, obtain capital equipment, and assemble staff for new programs, or merely serve as a course correcting device if the educational system and the local economy appear to be moving in largely the same direction.

III. Estimating Labor Supply

Gathering supply data is clearly the most onerous part of the planning task. There is no central source that lists all the courses, numbers of graduates, and their personal characteristics for a given labor market area. Consequently, the analyst will have to determine the size of the area to be studied, and the range of schools to be included. In a metropolitan area this can mean a very large variety of schools and programs: public high schools, vocational and technical schools, parochial schools, hospital-based nursing schools, proprietary schools, and community and junior colleges--apart from any four-year colleges. It is advisable to define the range of schools to be included in the analysis as broadly as possible so as to have the most complete estimate

of the numbers and kinds of graduates flowing into the labor market, and also to develop the most complete inventory of what educational and training resources exist in the area. This may help identify areas of duplication, or gaps that need to be filled.[5]

Given the current state of the art, it is necessary to collect information on such a broad range of institutions by hand. Happily though, most schools have it readily available, or can assemble it without undue difficulty--with the one important exception of the regular comprehensive high schools. Their graduates may have taken a variety of occupationally related courses without ever having been enrolled in a training program. To find out who took these courses, therefore, requires digging deeply into school records, and can be quite time consuming.

School guidance counselors are the source of much information on counseling and placement, some of which can be obtained in written form and some from directed interviews. However, most of this information only concerns first jobs; very few schools can provide much information about the subsequent career paths of their graduates. The lack of this kind of data on the employment histories of graduates of different kinds of schools and programs is a serious problem for educational and training program planners, and something they may want to try to remedy as they construct a comprehensive planning system.

Matching the data collected on educational program outputs with the information generated in the occupational forecasts mentioned earlier is somewhat complicated. The forecasted demand figures are cumulative net demand estimates for the entire forecast period. Therefore one must multiply the average annual educational output figures by the number of years in the forecast period (i.e., five years or ten years or whatever) to get a set of figures that are roughly comparable (assuming for the time being, of course, no change in enrollments). To address the problem of matching specific occupational demands with broader educational programs, whose graduates could conceivably work in any one of several occupations, one must turn to a BLS publication entitled "Matching Occupational Classifications to Vocational Codes."[6] This will enable the planner to identify and assemble all the occupations that the graduate of a machine trades course can fill, for example, and make a gross estimate of the relative supply and demand relationship. This can be done for each educational program in turn.

Again, caution should be exercised when interpreting these comparisons. They can show whether the educational system as a whole is moving in the same direction as the local economy. Beyond that, if the analyst discovers large surpluses--more graduates emerging than would seem to be needed in the local economy--then he has a set of questions to pursue: Are these graduates taking these courses for nonvocational purposes,

---

5. *In this regard, see a 1976 Department of HEW study, The Education of Adolescents. Generally, the report pointed to the failure of traditional American education in preparing young people for work, and suggested other educational approaches. (Editor)*

6. *Supplement III to Tomorrow's Manpower Needs, Bureau of Labor Statistics, 1975.*

i.e., for personal enrichment or avocational interests? Are they really looking for jobs in the field and having trouble finding them? Where are they going and what are they doing--leaving the area, taking jobs in other fields, withdrawing from the labor market? At the very least the analysis has pointed the planner toward a direction of inquiry that should be investigated through fieldwork. The answers may or may not suggest the need to plan a cutback in these course offerings.

By the same token, an apparent shortage should not be taken as a clear sign that there is a need for greatly expanding the relevant course offerings. Rather, the planner should make inquiries as to whether or not employers are actually experiencing shortages in these occupations, or are taking other steps to meet their needs, such as recruiting workers from outside the area, running their own training programs, or reorganizing production in some way which permits hiring untrained young workers and then moving them up the skill ladder as they acquire on-the-job experience.

IV. Labor Market Processes

Perhaps the most important contribution that a planner can make to the formulation of educational and training program policy is to develop an understanding of the broader processes or flows that exist in the labor market: How does one acquire job skills over time? How do firms reorganize their internal operations to adjust to skill shortages? How do they recruit and how do they train? Who hires young workers? How long do they stay and where do they go? How do they obtain information about jobs? How do women, re-entering the labor market, resume their careers? What are job patterns like for minorities?

The B. U. project in Worcester focused its efforts on trying to learn more about the transition from school to work for high school graduates. This project was two-pronged. It began with a series of interviews with a sample of employers in the area, drawn from the membership of the Chamber of Commerce and embracing a wide range of employers in terms of size and industry. The interviews were held with whomever was identified by the firm as being most knowledgeable about recruitment and hiring. The interviews resulted in an understanding of the flow among firms and industries of young workers who desired to explore a range of possibilities prior to making a career commitment.

The second prong of the inquiry revolved around trying to develop a body of data to confirm this view, and to provide more detailed information about it. The first step was to assemble all the data available from school counselors and placement offices to see what kinds of jobs young workers took right out of school--wages, duties, size and type of firm.

Next, steps were taken to compile and update the names and addresses of all the graduates of the public and vocational schools in Worcester in 1969--long enough ago that most of them have now settled into adult career choices--and then a questionnaire was sent to them, designed to elicit information on job and training histories since high school up to the present. The availability of this information makes it possible to look for major patterns or flows, among men and among women, among high school graduates as opposed to vocational school

graduates, among those who went to college for some length of time and those who did not, and so forth. While obtaining it is a large task, this information is very valuable. It provides an insight into the dynamics of the market, and a human texture, which could never be obtained from statistical sources. It is, also, the planner's major contact with program participants.

V. Conclusions

The project in Worcester has demonstrated that good local planning can be done, and that it can produce information of potential interest to education and training program administrators. For example, the initial data analyses demonstrated that Worcester's economy is unlike that of other SMSA's in Massachusetts. It has a higher proportion of durable goods manufacturing, and while this sector is not growing, it does appear to have significant manpower replacement needs. At the same time, Worcester's population has been very slow growing. Almost all the recent entrants into the workforce have been women and teenagers. Because the sectors which most employ such workers have been the ones experiencing growth, the area's beginning to run short of prime age males has been disguised. Worcester has a much smaller minority population than comparable cities in Massachusetts, but there are indications that it is growing swiftly, and that this growth is directly linked to labor recruitment difficulties in the nondurable manufacturing sector of the local economy.

Analysis of school data revealed a number of points which were of interest to planners. The parochial schools make little immediate contribution to the labor market--a very high percentage of these graduates go on to four-year colleges. The vocational schools are moving in the same direction as the local economy; however, the vocational training field has been entered vigorously by many local junior colleges which have experienced a drying-up of demand for liberal arts transfer programs. Yet even these are not wholly supplying the local market--many of the students have come from outside the area to study, and go home to work when they finish.

Interviews with employers indicated that the labor market for young males is two-tiered. The largest, better-paying firms rarely hire students directly out of high school. They prefer to hire young adults with some job experience behind them. Recent graduates spend several years milling around in a market characterized by small firms with little skill requirements. On the other hand, they provide, at least for some, a valuable testing ground. The study has begun to shed light on the patterns these workers follow. But questions remain about the patterns experienced by young women workers, by adult women re-entering the labor market, by minorities, and, of course, young workers who live in rural areas.

The fundamental assumption behind a good planning effort is that the more clearly one understands what is happening in the labor market, the more wisely one can determine where and how to intervene programmatically to obtain the most socially desirable outcomes. The project has demonstrated that local economies do differ in important ways, and that they are more complex than is usually supposed. Progress can be made, with a moderate expenditure of time and effort, in systematically

analyzing these economies, with results that frequently are of interest to educational and training program planners who are trying to meet local needs.

CHAPTER II

A PRACTICAL GUIDE FOR CONDUCTING LABOR MARKET RESEARCH

Prepared by
Saul A. Rigberg

I. Introduction

Since employability of their students is the ultimate concern of vocational and occupational educators, thoroughly examining the labor market associated with a particular occupation or industry can be an extremely rewarding and beneficial task. The researcher not only becomes familiar with national, regional, state, and local situations generally, she or he also develops a sense for the particulars of the occupation or industry chosen for study. And, perhaps, the most exciting offshoot of the research is the personal, verbal contact which can be made with local employers, usually small business people. The schools and the community have followed diverse paths which this activity can begin to link.

Chapter I raised a number of important considerations and offered many useful suggestions which are invaluable to the labor market researcher and planner. This chapter is designed to supplement that report by expanding the scope and shifting the emphasis.

Conducting a needs assessment and/or analyzing the labor market need not require the employment of esoteric materials or methods. But the approach is not of the cut-and-dry pre-fabricated variety either. For the most part, the thoroughness with which the research is undertaken should depend on the final product's function. For instance, if it were to be used by the administrators of just one high school then the sample needs assessment included in the next section of this monograph is already too involved. However, had that particular report been intended for state manpower planners it probably should have made greater use of DES publications and more employers might have been contacted.

In this particular case, the survey was to have justified, in terms of students' employment potential, funding from the State Office of Occupational Education for a new occupational training program at one high school. It was not to be published nor widely disseminated. In fact, less than ten people read it, and the amount of money requested was only in hundreds of dollars.

While planning is based on assumptions and judgments there is in principle only one way of making forecasts: past and present trends and patterns are extrapolated into the future.[1] This process of examining the past and present to make predictions about the future can be performed at different levels of complexity. An extremely simple

---

1. *Even the very basic assumption that there will be a future rests on sheer extrapolation; so far there has always been a future (which is now called past or present) and so we conclude that there will be more of it.*

forecast, which professionals call a naive forecast, involves nothing but an extrapolation of the very factor to be forecast (for example, the demand for cooks or waitresses). A more highly sophisticated forecast relates the process to other factors which are presumed to determine the process. Theoretically, an infinite number of such factors could be taken into account. Each factor introduced could in turn be broken up and related to others.

There is little doubt that a reasonably high level of complexity will increase the quality of forecasts. Even if forecasting cannot ever mean anything other than well informed guesses, the forecaster obviously will be better off the more specific information is known. The substitution of a series of specific guesses for one overall guess makes it possible to utilize whatever scattered information is available. It will also help to identify the points where efforts to get additional data are most urgent.

The forecasting model, from the vocational education planner's point of view, should be considered from three perspectives--by industry, by occupation, and by education. If one were researching specific occupations which happen to occur within the petrochemical industry, for instance, one would look at the health of the industry and related ebbs and flows within the larger society and economy; the demand for the specific occupations within that industry and within any other industry where that work occurs (if other industries were involved, they too must be looked at); and finally, one would determine what education and training is appropriate for the specific skills inherent in specific occupations.

The model should incorporate the following:

1. Demand and supply forecasts. Forecasts of employers' needs should be counterposed with estimates of available supply within a certain geographic area, including individuals within the vocational education system. Breakdowns in terms of supply by age, sex, race, and aptitude will be required to evaluate vocational education performance. Supplemental data on wage levels and trends, based on employer surveys, are necessary to bolster employer forecasts as well, by suggesting which occupations are (or are becoming) relatively attractive from a pecuniary point of view.

2. Sufficient detail about the job so that the curriculum content can be matched with the skill requirements of a given job or job cluster.

3. Changing technology must be taken into account to allow assessment of required qualitative and quantitative alterations in curriculum.

The planner must also consider such interconnected variable as fiscal and monetary counter-cyclical measures such as tax measures aimed at influencing production; restructuring of jobs, so as to use less scarce manpower; creation of new industries; wage changes, the availability of "feeder" occupations--transfers from other related occupations; and any other factors which may affect future growth or decline of the industry.

II. Methods

Thus, the labor market analysis should include aspects of national, regional, and local statistics and trends, and information garnered

from contact with relevant local employers. A first step would be to look at the *U. S. Industrial Outlook* and the *Occupational Outlook Handbook*.[2] This is a painless way of warming to the subject. Also, every industry publishes information about itself; skim through the appropriate trade magazines. Useful statistics and narratives usually are helpful in identifying the trends and problems. Since few libraries maintain a collection of trade magazines, the publications are more easily obtained in two other ways. Either they can be ordered from the organization cited at the end of each chapter in the *Handbook* and *Outlook* or it can be borrowed directly from the owners or managers of businesses in the appropriate field.

Besides trade magazines and the *Handbook* and *Outlook*, reports published by the Department of Commerce, the Department of Labor, the Bureau of Labor Statistics, and the Employment and Training Administration are potential sources of background information. Any library with a government documents section will be helpful. Also, many publications can be purchased at relatively low cost.

At the state and regional level many publications are available from the Massachusetts Department of Commerce and Development and, especially, from the Massachusetts Division of Employment Security (DES). Complimenting U. S. census data with the information contained in Commerce and Development monographs helps the researcher develop a feel for the community.

Many of the DES's publications are useful; two are indispensable: *Employment Requirements by Occupation, by Industry 1970-1985*, which contains statewise employment information, and the local version of the *Annual Planning Report* which provides employment projections for each particular labor market area. Other publications, such as *Area Manpower Review, Employment and Wages in Massachusetts*, and *Occupational Characteristics Insured Unemployed* warrant attention.

The point should be made again that it is not always necessary to examine or even be aware of all the extant material if care and judgment are exercised. Only a full time professional manpower planner or labor market researcher can satisfactorily answer all the questions which were raised in the first part of this monograph. Yet all mentioned considerations should be borne in mind.

Locally, contact can be made with the county Planning Office, town chambers of commerce, and most importantly, with the people who have first-hand contact with the occupations(s) under consideration--the business people who run the establishments, and whenever possible, the union business agent. Names of the firms to be contacted are available from many sources--state publications, chamber of commerce listings, the Yellow Pages. A little digging can turn up a business agent as well. The researcher would be remiss if she or he were not to contact these people.

There are a number of reasons for this: (1) For instance, local business people can tell you exactly how many people they employ; in what positions; the turnover rate; the wage rate; the training and

---

2. *These and the other publications mentioned below are reviewed more extensively elsewhere in this monograph.*

skills required; anticipated further needs; how and what students should be taught; and the like. (2) It makes sense that employers should be part of your advisory group, and (3) on-the-job training and career counseling is facilitated by a closer relationship between the school and the community.

It is reasonable to assume that if one could assemble for a given market employer estimates of future needs for workers in key occupations, one could produce the necessary forecast of demand in the labor market as a whole. Depending on time and energy constraints, the extent and mode of contact with employers can vary greatly. For example, one might decide to contact every relevant employer in the town, immediate area or county (rendering disclaimers of accuracy moot) or generate a random sample (which is often difficult) if the population were very large. One might decide to send written questionnaires or conduct telephone interviews or personally visit the employers.

Each survey technique has its advantages and disadvantages. The written questionnaire is time-consuming to develop but is administered quickly. However, only a small percentage of people respond to questionnaires and often a reminder notice is necessary for even that small sample to materialize. And further questions which develop after reading of the replies cannot easily be pursued.

The researcher will quickly discover that people enjoy talking about their work, especially when they can see that the person they are talking to is genuinely interested. It is becoming increasingly less common to be able to enjoy conversations with people about one's life. Most people jump at the opportunity. Telephone conversations are fairly quick if desired, and little time is lost if the employer is unavailable. The toughest part of a telephone interview is to catch the respondent at a time and mood when he or she will answer. Personal face-to-face contact is both the most time-consuming and the most rewarding. Such an approach will elicit much information, both asked and unasked for, immediately relevant and generally useful, allowing for a genuine understanding of the field to develop.

The cooperation of employers is indispensable, expressed not only in answering questions, but in supplying estimates based on some considered judgment of probable changes in employment and in occupational structure within the establishment. The data can be made more useful by ensuring that information supplied by employers is based on a uniform definition of occupations.

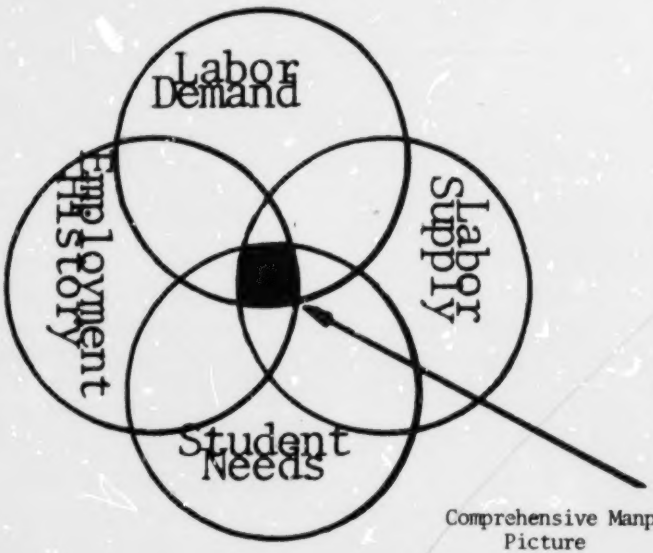
The researcher would be misleading future employees if wages and working conditions were not investigated. Both employers, employees, and unions should be asked about those very important considerations. Often low or high occupational unemployment or turnover rates can be explained in this way.

Discussions with experts in the field might also be useful. Academics and government administrators are especially appropriate in this regard as are people involved with vocational-technical schools.

III. Developing a Comprehensive Manpower Picture

The identification and measurement of manpower needs must be accomplished before effective evaluation of current and proposed career and vocational education programs can be implemented. This calls for determining (1) projected labor demand, technically defined as the various quantities of labor that employers will purchase at various prices (wage rates); (2) projected labor supply, which refers to the various numbers of people who will be willing and are qualified to accept jobs at various wage rates that may be offered by employers; (3) the career or occupational desires of the relevant student population; and (4) the employment history of former students (to test success of current programs). The relationships among these concerns must then be balanced in order to focus the full manpower picture.

The relationship can be described pictorially:



The five steps which follow can help develop that comprehensive manpower picture.

A. Labor Demand

1. Develop employer inventory.
2. Determine occupations to be surveyed.
3. Develop survey instrument.
4. Select survey sample.
5. Enlist support of employers, employer associations, and interested agencies and groups, e.g., unions.
6. Coordinate contacts and follow-up with employers.
7. Process survey data.

B. Labor Supply

1. Assimilate data on available workseekers furnished by DES.
2. Examine estimated and actual public vocational and occupational education program enrollment data extracted from published reports.
3. Consider information on private schools' occupational training output.
4. Integrate enrollment in government training programs.
5. Study indicators of private industry training from appropriate section of labor demand survey.

C. Student Needs Survey

1. Determine universe to be surveyed (entire high school, seniors only, juniors and seniors, etc.).
2. Select representative sample, e.g., all schools with more than 500 students, urban schools, rural schools, various geographic locations, etc.
3. Develop survey instrument and distribute to selected schools and students.
4. Prepare data summaries indicating range of student interest by career and occupational areas.

D. Employment History

1. Determine universe to be surveyed (all former students, those with specific occupational training, people who graduated five years ago, three years ago, etc.).
2. Select survey sample.
3. Develop survey instrument and distribute to selected individuals.
4. Analyze data to indicate strong and weak points of current occupational programs.

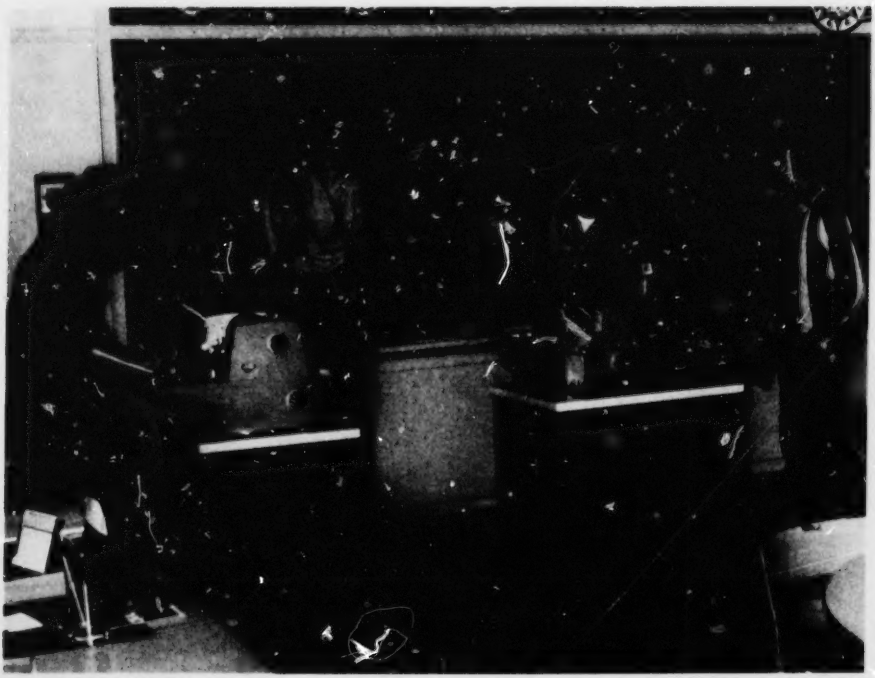
E. Using Manpower Needs Data in Evaluating Occupational Education Programs

1. Develop interface between labor demand, labor supply, student needs and employment history to indicate potentially effective programs.
2. Weigh program proposals against interface.
3. Consider needs, data results, and other pertinent information and develop recommendations for program action, e.g., establish new program; continue, modify, or expand existing program, or eliminate current program if such action is indicated; suggest scope and depth of new program after comprehensive study and analysis.

IV. Concluding Remarks

The concept of interface, as is probably clear by now, is very important for the labor market researcher or manpower planner to consider. The interconnectedness of events and trends and "forces" must be taken into account. If that concept is not kept in mind, large gaps in one's forecasts will soon appear.

These interconnections are not static; the character of the interface is dynamic and constantly changing. In one day, new events can occur which may significantly alter one's projections. Knowing and monitoring the variables that have been pointed out in this and the preceding section will enable those involved in manpower/occupational planning and administration to keep abreast of the changing environment.



APPENDIX I

SAMPLE FORECAST STUDY: FOOD PREPARATION AND SERVICE[1]

Prepared by
Saul A. Rigberg

I. The Food Service Industry

In 1974, the food service industry employing over 4.3 million people was the fourth largest in the United States in terms of sales-dollars. It was (and is) first among the country's service industries in terms of persons served. Significant technological changes in food preparation and service, pervasive advertising which creates demand, changing roles of women as housewives, an ever increasing hurried pace of life, and more and more vacationers all have influenced the growth of this industry.

There are approximately 500,000 food service establishments in the United States, of which 350,000 are commercial eating places open to the public. The food service industry includes all business and organizations that serve food to people away from home: restaurants, drive-ins, coffee shops, hotels and motels, clubs, cafeterias in manufacturing plants, military feeding operations, hospitals, schools and colleges, construction camps, retirement homes, mobile kitchens and vendors, and institutions.

Most of the establishments are small and have fewer than ten paid employees. Many of these are owner-operated with little or no paid help. An increasing proportion of restaurants, however, are part of a chain operation.

About three-quarters of all food establishment employees prepare and serve food, and keep cooking and eating areas clean. Waitresses and waiters, and cooks and chefs are the two largest occupational groups. Other common jobs are counter workers, bartenders, dining room attendants, dishwashers, pantry workers, and janitors and porters. Another large group of restaurant workers--about one-seventh of the total--are managers and proprietors. Some own and operate the establishment, others are salaried employees who manage it for the owners.

A national manpower survey, *Eating and Drinking Places Industry*[2], which contacted 3,800 individual establishments employing over 220,000 persons, concluded that the food service industry had a voluntary quit rate and a rate of hiring employees which were both well in excess of that of all manufacturing industries. The voluntary quit rate of seven

---

1. *For a proposed Vocational Training Program at Amherst High School. This report was authorized by and prepared for Walter Popper, Occupational Education Director of the Hampshire Educational Collaborative.*

2. *Eating and Drinking Places Industry, Industry Manpower Survey, Number 115, U. S. Department of Labor.*

percent per month and the accession rate of 10.4 percent per month extended to annual rates would indicate that of the 125 percent of the new employees hired each year, 84 percent will voluntarily leave their positions. This study further determined that low wages, transportation difficulties, and hours of employment were major reasons cited as contributing to the instability of employment. Labor turnover rates occur with the greatest frequency in the ware-washer and skill service areas. Turnover is particularly high among part-time workers who often are students.

The food service industry is easily entered and easily left, according to the School of Hotel Administration, Cornell University.[3] Reasons mentioned include a questionable image, relatively low wages, minimal benefits, the absence of uniform standards, obfuscation of a career potential, poor if any on-the-job training, and the lack of an upward orientation in which economic and social needs can be met.

Women and minorities have had considerable access to the low wage, entry-level, and mid-level positions. Two years ago, the United States Department of Labor, Bureau of Labor Statistics, in its "Employment Data for Detailed Occupations," provided figures which indicated proportions of the listed occupations held by "females" and "Negro and other races." The report included annual average data on employed persons in 12 major occupational clusters and nearly 150 individual occupations.

In a main classification for all groups, labeled "manager and administrators," women represented 18.5 percent of the total, while minority groups comprised 4.2 percent. There was a considerable improvement in those figures for food service people. The breakdown for "restaurant, cafeteria, and bar managers" showed that 33.9 percent were women, and 9.3 percent members of minority groups. Compared to the average, there were nearly twice as many women and minorities in food service manager positions.

Looking at overall food service industry statistics, 70.2 percent of the workers are women and 14.5 percent are minorities. According to the study, more than one-third of all bartenders are women. Women also dominate certain other job categories such as cooks (58.8%), food counter and fountain workers (85.2%), and waiters/waitresses (91.8%). Cooks in the minority group employee category were 21.5% of the total. Minority employment was 8.3% for food counter and fountain workers and 8.1% for waiters/waitresses.

II. National Trends

More of the United States' labor force is engaged in the service sector than in the productive sector, and that proportion is increasing. The Department of Labor, Bureau of Labor Statistics (BLS) estimates that between 1968 and 1980 there will be an increase in employment of more than 30 percent in service-producing industries but only 9 percent in

---

3. *A Study of Career Ladders and Manpower Development for Non-Management Personnel in the Food Service Industry, School of Hotel Administration, Cornell University.*

good-producing industries.[4] Within that service sector, food preparation and service is the fastest growing industry, according to the National Institute for the Food Service Industry.[5] Mr. F. P. Lattuca, Professor of Restaurant Management in the Hotel and Restaurant Management in the Hotel and Restaurant Administration Department at the University of Massachusetts/Amherst, states that if the recent 11 percent growth rate remains undiminished, by the year 2000 the food service industry will be the largest service field in the country.[6] Less than a decade ago 20 cents of the food dollar was spent "eating out," including workers' meals on the job. Today that figure is closer to 36 cents.[7] According to Mr. Latucca, currently two out of five meals (40%) are eaten out, but if the trend continues through 1990 only one-third of the meals will be eaten at home.

Careers in Food Service: A Guide for Students, argues that the recent recession did not affect the food service industry as deleteriously as other industries, primarily because of the proliferation of such fast food franchises as MacDonalds and Kentucky Fried Chicken which continued to offer meals at modest prices. Sales volume continued to rise. Employment continued to grow and there were more jobs available than people to fill them. About 250,000 new people must enter the food service and preparation industry annually to meet national employment needs, writes the National Institute for the Food Service Industry. 80,000 of these jobs are new; openings are primarily as cooks, bakers, and counter people. The balance of the openings are due to turnover.[8]

A Department of Labor publication states that "employment in the restaurant industry is expected to increase faster than the average for all industries through the mid-1980's." Kitchen helpers and waitresses/waiters will be in especially high demand. Employment opportunities also are expected to be favorable for skilled cooks and salaried restaurant managers.[9]

Two caveats should be mentioned. Inadequate wages (in 1974, according to the *Occupational Outlook Handbook 1976-77*, non-supervisory workers in the restaurant industry averaged $2.33 an hour, excluding tips), and difficult working conditions (constant pressure, determined customers, and the split shift) should be expected by most employees. Employment is unsteady as well; 85 percent of new establishments (mostly the independents) fail in the first year, Mr. Lattuca stated.

---

4. *"The U. S. Economy in 1980: A Preview of BLS Projections,"* Monthly Labor Review, *April 1970, pp. 3-34.*

5. *"Careers in the Food Service: A Guide for Students," National Institute for the Food Service Industry.*

6. *Interview, May 13, 1977.*

7. *In These Times, April 13-19, 1977.*

8. *"Careers in Food Service: A Guide for Students," National Institute for the Food Service Industry.*

9. *Occupational Outlook Handbook 1976-77, Department of Labor.*

III. State Trends

Statewide figures reflect national employment trends. The Division of Employment Security (DES) points to a "...shift in the composition of Massachusetts employment...away from good and into the service sectors."[10]

> Overall, demand for workers in the service worker field is expected to increase flows from a sizeable replacement need. Within this group, occupations in health, food, and cleaning service activities are projected to grow most rapidly.[11]

A 1976 update of DES's 1974 occupational needs survey gathers together useful statistics for seven occupations within the food service industry.[12]

10. *"Manpower Requirements for Massachusetts by Occupation, by Industry 1970-1980," April 1974, p. 2.*

11. *Ibid., p. 5, my emphasis.*

12. *"Employment Requirements for Massachusetts by Occupations, by Industry, 1970-1985," July 1976.*

TABLE I

Total Employment in the Food Service Industry
1970, 1974, and 1985 and
Average Annual Number of Job Openings, 1974-1985

Occupations	Employment 1970	Employment 1974	Employment 1985	Yearly Labor Demand 1974-1985 Total Demand	Due to Growth	Due to Separations
Food Service Workers	105,809	116,400	127,684	6,916	1,026	5,890
Bartenders	5,821	7,373	7,859	209	44	165
Waitress's/ Waiter's Assistant	2,870	3,985	4,224	80	22	58
Cooks, Except private	20,828	22,919	26,915	1,348	363	985
Dishwashers	7,273	6,989	7,678	318	63	255
Food Counter and Fountain Workers	16,224	19,262	19,942	1,105	62	1,043
Waitresses/ Waiters	38,225	39,882	43,970	2,862	372	2,490
Food Working N.E.C., Except Private	14,568	15,991	17,096	994	100	894

Source: DES, "Employment Requirements for Massachusetts by Occupation, by Industry, 1970-1985," July 1976, pp. 26, 35.

Statewide, then, the food service industry employed almost 11,000 more people in 1974 than in 1970, and DES expects an additional 11,000 food service employees to be engaged in 1985. While this suggests a retardation of the growth rate, from 10 percent during the 1970-1974 period, to 9.5 percent during the 1974-1985 period, the demand for additional workers is clearly demonstrated.

Overall, DES predicts that 6,916 positions in the food service industry must be filled each year between 1974 and 1985 to satisfy growth and turnover situations. Cooks, food counter and fountain workers, waitresses and waiters are especially needed, 1,348; 1,105; and 2,862 respectively. One can argue, then, that the State of Massachusetts has not escaped the national trends described above. Due to separations and growth, employment opportunities in the food service industry in the state are numerous.

IV. Regional and Local Trends

Regional statistics recently released by DES confirm national and state figures, as can be seen in Table II.

TABLE II

Springfield-Chicopee-Holyoke
Regional Area Employment Trends

Occupations	Employment 1970	Employment 1974	Employment 1985	Yearly Labor Demand 1974-1985 Total Demand	Due to Growth	Due to Separations
Food Service Workers	12,599	12,918	13,770	785	106	652
Bartenders	1,115	1,146	1,229	53	10	43
Waitress's/ Waiter's Assistant	398	402	414	7	1	6
Cooks, Except private	2,190	2,293	2,531	124	31	93
Dishwashers	757	766	789	30	3	27
Food Counter and Fountain Workers	1,623	1,654	1,737	99	10	89
Waitresses/ Waiters	4,703	4,824	5,148	333	40	293
Food Working N.E.C., Except Private	1,813	1,843	1,922	111	10	101

Source: Murray Leaffer, DES, "Annual Planning Report Fiscal Year 1978," May 1977, p. 33.

It is projected that an average of 758 job openings will be created each year between 1974 and 1985 in this labor market region, including 124 cook and 333 waitress/waiter positions. Due to separations and growth, employment opportunities in this region are numerous and will remain so for at least the next decade, DES figures suggest.

Mr. Paul Garvey, Director of the Smith College Food Services, argued that there are at least 2,000 food service and preparation jobs in Hampshire County. Considering the hospitals--Cooley Dickenson, Veterans Administration, Belchertown State; the colleges--Smith, Amherst, University of Massachusetts, Hampshire, private schools; public schools; and dozens of restaurants (over 20 are located in the town

of Amherst alone) that estimate is easily substantiated, he said. With an average national attrition rate of 7 to 12 percent, Mr. Garvey added, "at the very least there are 200 openings in the county each year."[13]

V. Amherst Area Employment Opportunities

Through telephone conversations with the managers or owners of many of the local eating establishments in the Amherst area, sufficient information has been gathered to indicate that (1) a substantial demand exists for food service works, (2) previously trained personnel are preferred, and (3) setting up a vocational training program in food service and preparation at the Amherst High School is considered to be a good idea.

The survey responses and also the information provided by Mr. Latucca of the Hotel and Restaurant Department, University of Massachusetts, Amherst, and Mr. Paul Garvey, Director, Food Services, Smith College are consistent with national, state, and regional employment statistics. The 31 establishments surveyed reported a total employment of between 1,363 and 1,403, and estimated that 382 people were hired since May 1976. This represents a substantial 27-28% turnover rate. If we exclude the 125 new employees the manager of McManus engaged since last May, which appears not to be indicative of local trends, the turnover rate is a more reasonable 19.5%. Turnover rates varied considerably, ranging from zero to 250 percent. College food services tended to have a lower turnover rate; fast food establishments a higher one. Jobs were available in all nonmanagement occupations within the industry.

Mr. Lattuca and Mr. Garvey indicated that job opportunities in food service were unlimited in this area. Mr. Garvey's estimate that a minimum of 200 positions were open each year in the area appears low.

With very few exceptions, respondents indicated that vocational training would benefit young people in obtaining both entry-level positions and later on in their careers, and would benefit the food service industry. The only concern expressed was that the program "would have to be done properly." Most of the owners/managers said they would be happy to help out and serve on an advisory board.

VI. Concluding Remarks

Considering all the information so far obtained, it is clear that a large demand exists for people trained in food service occupations. Vocational training can benefit students in at least two ways: (1) by helping individuals who have no desire to obtain a college degree, but desire access to fairly skilled entry-level positions; and (2) by providing an essential background in both the theory and practice of food service and preparation for those who wish to continue their education with the ultimate goal of a management career in the food industry.

The skills and experience needed for restaurant work vary from one occupation to another, from jobs in the industry that can be learned by

13. *Interview, May 16, 1977.*

vocational or on-the-job training, to management positions requiring either more formal training or in-house experience.

Entry-level positions (minimum wage prevails except in union establishments) which require a minimum of training include:

> Busboy/busgirl, waiter/waitress, host/hostess, sanitation and maintenance worker, kitchen helper, sandwich maker, soda fountain worker, beverage worker.

Middle-level positions requiring some experience with additional on-the-job training usually provided are:

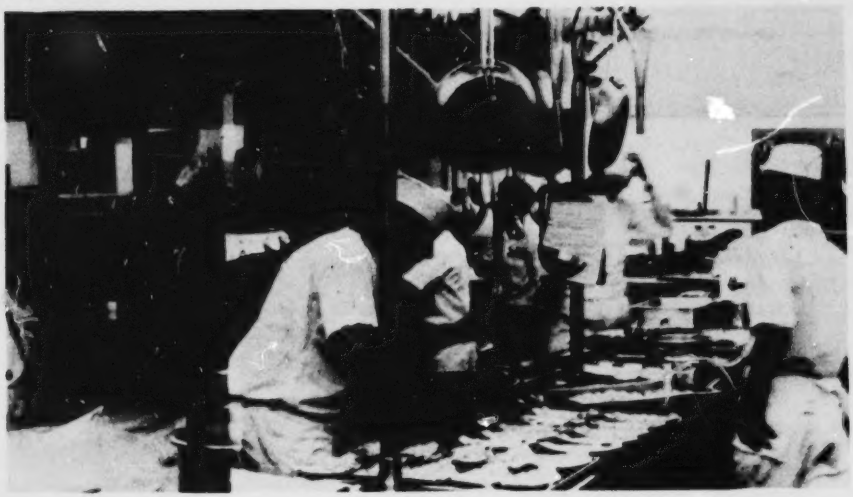
> Cashier, food checker, chef and cook, pastry chef and baker, pantry supervisor, food service supervisor, waiter-captain, purchasing agent and storeroom supervisor, meat cutter.

Wages and salaries depend on whether the employees are represented by a union and type of restaurant (e.g., fast-food, high-priced, etc.). For instance, a cook might earn anywhere between $3.75 and $8.00 an hour. Union wages average $1.00 more per hour.

Higher-level management positions and special positions that an individual may qualify for, depending on past experience and education, are the following:

> Restaurant manager, assistant manager, food production manager, personnel director, menu maker, merchandising supervisor, director of recipe development.

Depending on the type of eating establishment, salaries can range between $150 and $600 per week.



APPENDIX II

PUBLISHED RESOURCES FOR LABOR MARKET ANALYSIS

I. *Federal Publications*

The federal government published literally tons of information related to labor market research or manpower planning. Some publications are more useful than others. The most useful are described below. Copies can be found at most public libraries.

U. S. Census: Population Characteristics, General Social and Economic Characteristics, and Detailed Characteristics are the three volumes from which such information as the size and characteristics of the local population, rates of change, and labor force composition by age, sex, and race can be obtained. The data will also help discern trends in industries and occupations, staffing patterns by industry, and the age and sex structure of employment by industry.

U. S. Industrial Outlook, published annually by the Department of Commerce provides profiles of industries which account for about 85 percent of the total value of this country's manufacturing shipments. One approach to determining future employment figures is to examine the health of the relevant industry. Various sections of the *Outlook* are useful for just that purpose. For most industries, information on size in terms of shipments, employment, and number of establishments; competitive trade position; and growth history in key areas (shipments, trade, employment) is provided. The narrative sections contain long-range forecasts of the industry's health.

Occupational Outlook Handbook, published annually by the Department of Labor, describes more than 850 occupations, including information on the nature of a particular job, the training required, and the short- and long-term employment outlook. Each "Employment Outlook" section begins with remarks about anticipated employment growth through 1985. The occupation is described as likely to grow about as fast as the average for all occupations; faster than average; or slower than average. Often the effect on job opportunities of fluctuations in the business cycle are discussed, and when the information is available, the *Handbook* examines anticipated demand-supply relationships.

Matching Occupational Classifications to Vocational Codes, published by the Bureau of Labor Statistics (BLS), matches specific occupational demands with broader educational programs. This publication, for example, will enable the planner to identify and assemble all the occupations that a graduate of a machine trades course can fill and make a gross estimate of the relative supply and demand.

II. *State Publications*

Monographs on Massachusetts. Bookletts covering the vital statistics of every town, city, and county in the state are published by the Department of Commerce and Development (100 Cambridge Street, Boston, MA. 02202). Each monograph, which can be purchased from the state bookstore

(at the Statehouse) for $.50, provides a wealth of useful statistics, including specific information on population and housing gleaned from federal and state censuses, the historic trends and composition of the economic base, and general information, such as density, land use, climate, etc. These monographs are valuable to the labor marker researcher because of the emphasis on factors which influence labor market supply and demand, e.g., education of the population, types of industry, and the like.

The Division of Employment Security (DES) publishes a number of reports upon which the researcher and planner should depend. All of the publications mentioned below can be obtained free of charge, with the one exception of ESARS, by writing to the Research and Information Service, Massachusetts Division of Employment Security, Charles F. Hurley Employment Building, Government Center, Boston, MA. 02114. Any library with a government documents section might also have them available.

Annual Manpower Planning Report is researched for the state and each major labor market area. Each report consists of a lengthy narrative designed to assist planners. They include information on economic developments and outlook, population and labor force characteristics, employment developments and outlook by industry and occupation, recent trends in unemployment, characteristics of the disadvantaged and of other individuals, and barriers to employment of the disadvantaged.

Area Manpower Review, issued semi-annually, analyses current economic developments for the state and each major labor market area. Its contents include employment developments, unemployment trends and characteristics, average hours worked and earnings for production workers by industry, area manpower problems, employment and unemployment outlook, and recent contracts, new plants and anticipated shutdowns.

Massachusetts Economic Assumptions, updated annually, provides a detailed analysis of the state's economy, including discussion on economic developments and forecasts, employment developments and projections by industry, recent contracts, new plants and anticipated shutdowns.

Massachusetts Trends in Labor Force, Employment, and Unemployment is a monthly newsletter which covers the state and all labor market areas. It includes highlights of the past month's employment and unemployment developments, labor force trends, and unemployment rates for the state and the 27 labor market areas for the current month, previous month, and one year ago. Using it, the researcher is able to observe recent economic developments.

Industrial Pattern of Massachusetts is a statewide report, updated periodically, containing maps and a list of the larger firms in each manufacturing industry. The employment figures and plant locations provided can help the researcher understand the nature of change in the manufacturing industries.

Employment Requirements by Occupation, by Industry 1970-1985 is an extremely useful publication which consists mostly of employment statistics. Reports are prepared for the state and the major labor market areas. Each publication includes projections of total employment by industry, adjusted for class of worker, and the average annual number of job openings by occupation during the 1970-1985 period. The state

reports also include highlights of industry employment trends and manpower requirements, general economic assumptions, and explains the methodology used in arriving at the projections. These reports are especially valuable for determining the current occupational profile and projected comprehensive occupational requirements, and current and projected labor demand.

Employment Review is a monthly newsletter which covers recent employment developments in the state and in major labor market areas. Its contents include employment indicators and wage, salary, and hours statistics.

Labor Turnover in Manufacturing is a monthly newsletter covering recent labor turnover developments in the state and in the major area labor markets. Its contents include highlights of recent labor turnover developments and labor turnover rates in manufacturing and industry. The researcher can identify those industries that are currently hiring or laying off, whether growth in employment is due to new hires or recalls, or whether separations are due to quits or layoffs.

Massachusetts Cities and Towns—Employment and Wages in Establishments Subject to the Massachusetts Employment Security Law by Major Industry Divisions is an annual publication which contains employment and population data on the 351 cities and towns in Massachusetts. Its contents include the average annual wage, number of establishments, average annual employment by major industry division by city and town, and employment and wages in establishments. Labor market planners can use the data to determine trends in employment and wages and to analyze the major industries in each city and town.

Employment and Wages in Establishments Subject to the Massachusetts Employment Security Law—State Summary is an annual publication which provides industry employment and wage information for the most current year by major industry division. It also includes trends in industrial employment, seasonal patterns of employment by industry, and the number of firms in each industry. Wages are broken down by two-and three-digit standard industrial classification (SIC) titles.

Employment and Wages in Massachusetts and the Major Labor Market Areas, updated annually, covers average annual employment and wages by industry for the state and each major labor market area, allowing for the discerning of trends.

The Large Employers in Massachusetts is an annual publication which lists the establishments in the state which employ more than 500 workers. This listing is useful both for placement activities and for conducting first-hand labor market research.

An Occupational Profile of... is a series of reports on specific areas of employment. Examples are selected nonmanufacturing industries, wholesale and retail trade, manufacturing industries, and selected federal, state, and local government agencies. The reports consist mostly of tables and highlight employment developments, the specific occupations of employees, and percentage distribution of occupations of employees. The information encourages an evaluation of current levels of occupational employment and demand for labor by type of skill. This can serve as a basis for projecting future occupational requirements.

Occupational Characteristics Insured Unemployed is a quarterly publication which describes the insured unemployed by broad occupational category for the current three months and the same period a year previous. The data, arranged in tabular form, provides the researcher with an indication of labor demand and supply.

Annual Summary Characteristics of the Insured Unemployed is an annual statewide report which can help guide policy decisions. Its contents, arranged in tabular form, include occupational characteristics of the insured unemployed, industry attachment, most recent employer of the insured unemployed, age and sex characteristics, and duration of the most recent spell of unemployment by age and sex of the insured unemployed.

A Monthly Survey Unfilled Job Openings provides an indication of labor demand and supply in the major labor market areas. Unfilled job openings by major occupational category and selected occupational groups are covered. From time to time, DES issues unfilled job opening reports on specific occupations such as machine trades, engineering, health, electrician, etc.

Annual Statistical Summary Unfilled Job Openings allows the researcher to determine trends in the demand for labor and to identify those occupations which are in persistent demand. The narrative and tables examine labor demand over the past year, comparison of unfilled job openings by major occupational category, and unfilled job openings the last day of each month.

Employment Security Automated Reporting System (ESARS) are reports based on data compiled from state and local Employment Security job applications, orders, and office operations. The data on those forms are optically scanned and their characteristics summarized locally and on a state-by-state basis. In Massachusetts, the reports are not published, but public access is possible at the Boston DES office.

III. *Useful Publications for Background Knowledge*

BLS Handbook of Methods for Surveys and Studies, U. S. Department of Labor Bulletin 1910, describes how the Bureau of Labor Statistics goes about doing its job. The scope and rationale of the department's work is explained. The labor force, employment, turnover, occupational outlook, productivity and how BLS looks at the economy are treated.

Employment Forecasting, Organization for Economic Co-operation and Development, 1962, is a "how-to" monograph with some useful suggestions and examples from European countries.

Handbook for Manpower Planners is a two-part work published by the Bureau of the Census and written by Dani Emery, Ruth Kaplan, and Lynn O'Donnell in 1976. It is written for professional manpower planners but the language is fairly simple so that the occasional planner can make use of their suggestions. Shortcuts to understanding government publications are especially useful.

Handbook for Projecting Employment by Occupation for States and Major Areas, Bureau of Employment Security, Manpower Administration, U. S. Department of Labor, provides detailed operating instructions for the specific use of state employment security agencies. The report explains how analysts in such agencies can use various methods and sources of data, including the national manpower information presented in *Tommorrow's Manpower Needs*, to develop state and area manpower estimates and projections.

Manpower Forecasting For Vocational-Technical Education, by David Kidder, Eric Clearing house on Vocational and Technical Education, 1972, contains an excellent bibliography and good advice as well.

Manpower Forecasting in the U. S.: An Evaluation of the State of the Art, S. C. Kelly, Thomas N. Chirikos, and Michael G. Finn, Center for Human Resources Research, The Ohio State University, 1975. This work consists of an analyses of over 350 published manpower studies which the authors considered to be the most complete, with recommendations for further improvement.

Tomorrow's Manpower Needs, U. S. Department of Labor Bulletin no. 1606 is a four-volume work: Vol. 1, "Developing Area Manpower Projections;" Vol. 2, "National Trends and Outlook: Industry Employment and Occupational Structure;" Vol. 3,"National Trends and Outlook: Occupational Employment;" Vol. 4, "The National Industry-Occupational Matrix and Other Manpower Data." Volume 1 is especially useful for work in labor market forecasting.

APPENDIX III

GLOSSARY OF TERMS

Civilian Labor Force: All persons 16 years old and older employed and unemployed and not in the armed forces.

Cyclical (or Demand Deficient) Unemployment: Unemployment caused by downturns in the general economy.

Derived Demand: When the demand for product a exists only because of the demand for product b, the former is a derived demand. For example, the demand for rubber, in part, depends on the demand for tires.

Discouraged Workers: Hidden unemployed persons who make no overt attempt to find a job because they think none are available or because they have become frustrated by their lack of success in finding work. These persons are not included in the unemployment count--most are people who have never worked before--women, teenagers, blacks, and other minority groups.

DOT - Dictionary of Occupational Titles: This classification scheme is the only attempt at a comprehensive description of all the jobs in our economy in terms of some of their basic dimensions. Over 26,000 occupations are described.

Dual Labor Market: In general, people are employed in unstable, low wage firms on the competitive periphery of the economy or in career-type, high wage firms in the monopolistic center of the economy. Women and other disadvantaged groups are generally found in the secondary labor market; white males predominate in the primary labor market.

Entry-Level Jobs (or Ports of Entry): Jobs which provide initial employment in a firm or industry usually occupy a low rung on the career or occupational job ladder. Internal and external labor markets are interconnected at certain job classifications which constitute ports of entry to and from the internal labor market.

ESARS - Employment Security Automated Reporting System: Reports based on data compiled from state and local Employment Security job applications, orders, and office operations. The data on those forms are optically scanned and the characteristics are summarized locally and on a state-by-state basis. In Massachusetts, the reports are not published but public access is possible at the Boston DES office.

External Labor Market: Labor supply and demand which is outside the boundaries of firms or administrative units, such as a manufacturing plant. Prices, allocation, and training decisions are controlled directly by economic variables.

Fiscal Policies: Control of the economy through revenues and expenditures of the government sector.

Frictional Unemployment: Unemployment caused by people being in between jobs.

Industry Mix: This term refers to the area concentration ratio of industrial manufacturing levels which helps determine wage levels; i.e., the industries in a given community.

Institutional Labor Market: Positions are sometimes filled according to internal union or corporate (the institution) procedure.

Internal Labor Market: An administrative unit, such as a manufacturing plant, within which the pricing and allocation of labor is governed by a set of administrative rules and procedures. With the exception of entry-level or ports of entry jobs, positions within the internal labor market are filled by the promotion or transfer of workers who have already gained entry, thus being shielded from the direct influences of the external economy.

Internal Job Cluster: A stable group of job classifications/work assignments within a firm (wage determining unit) that are interconnected by technology and the administrative organization of the production process.

Job Ladder: Hierarchy of jobs, movement up which depends on experience and skills.

Labor Force: All persons 16 years old and older classified as employed or unemployed plus members of the armed forces; about 90 million people in the U.S.A.

Labor Force Participation Rate: Percentage of the total labor force which actually works or seeks work.

Major Labor Market Area: Massachusetts economists have divided the state into ten major areas for the purpose of making research easier to conduct and its findings more useful. The ten areas are Boston, Brockton, Fitchburg-Leominster, Lawrence-Haverhill, Fall River, Lowell, New Bedford, Pittsfield, Springfield-Chicopee-Holyoke, and Worcester. There are seventeen other labor market areas.

Metropolitan Area: Comprised of both the urban and suburban areas which are treated as one entity.

Monetary Policies: Exerting influence over the economy through control of money and interest rates.

On-the-Job-Training (OJT): Rather than learning skills or procedures in the classroom or shop, one learns while on an actual job.

Peripheral Worker: Person who works intermittently or part-time and tends to move in and out of the labor force.

Primary Labor Market: The primary segment is located predominately in corporate and state sectors of the economy, where jobs are characterized by relatively high wages and some job security assured through white- and blue-collar unions. Clear job ladders, seniority rules, and opportunities for promotion exist. Credentials of various types play an important role and workers were predominately adult, but not aged, white males.

Seasonally Adjusted Rate: Because many changes in employment and unemployment occur during the course of the year due to seasons, holidays, vacation, and harvest time, it is difficult to tell whether developments between any two periods reflect changing economic conditions or merely normal seasonal fluctuations. A seasonal adjustment is a statistical technique that eliminates regularly occurring fluctuations in the employment rate.

Seasonal Unemployment: Temporary joblessness due to seasonal changes. Construction and agriculture are especially affected.

Secondary Labor Market: In this sector jobs are characterized by low wages, great employment instability and worker turnover, and little unionization. Job ladders are few and there is little chance for promotion. Educational credentials are not important requirements for job entry and jobs leave little room for learning skills. A large portion of the jobs in the small-scale entrepreneurial sector may be considered part of this secondary labor market although the lowest level white-and blue-collar jobs in the corporate sector also take this form. These jobs are usually filled by oppressed social groups: blacks, Puerto Ricans, Chicanos, native Americans, women, the elderly, youth, and other minority groups.

Secondary Workers: People other than those who are the primary source of income for the family (students, some married women).

Service Economy: Refers to an economy, like our own, in which more people are employed in the service sector (recreation, trade, entertainment, government, sales, etc.) than in the manufacturing or agricultural sectors.

SIC CODE - Standard Industrial Classification Code: This scheme classifies establishments by the type of industrial activity in which they are engaged. Multiple digit numbers are assigned to each type of establishment. The Census Bureau generally defines employment data in SIC terms.

SMSA - Standard Metropolitan Statistical Area: A county or a group of contiguous counties which contains at least one city of 50,000 inhabitants or more, or "twin cities" with a combined population of at least 50,000. The population living in an SMSA is designated as the metropolitan population.

Structural Unemployment: Unemployment caused by technological changes, foreign competition, shifts in demand resulting from altered consumer tastes, fiscal and monetary policy, and declining industries.

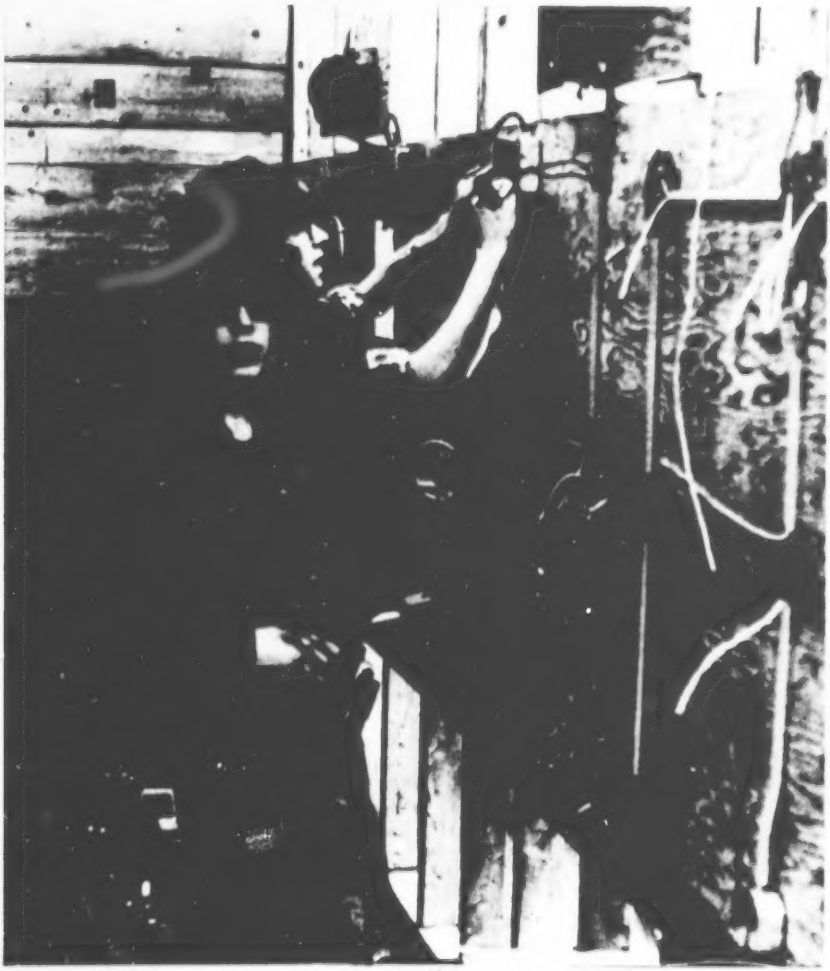
Underemployment: Workers who were employed 34 hours per week or less due to economic conditions, i.e., these persons usually work full time but their hours were cut back because of slack work, material shortages, etc. Also underemployed are persons who work part time because they cannot find full time work and people who have occupational or other advanced training but are working either below their level of competence or at a different occupation due to economic conditions.

Unemployed: Persons 16 years of age and over who did not work during the survey week, made specific efforts to find work within the last four weeks, and were available for work during the survey week. Also

included are those who were waiting to be called back to a job from which they had been laid off or were waiting to report to a new wage or salary job within 30 days.

Unemployment Rate: The number of persons unemployed expressed as a percentage of the civilian labor force.

Wage Contours: A stable group of wage-determining units that are so interconnected by (1) similarity of product markets, (2) resort to similar sources for a labor force, or (3) common labor market organization (custom) that they have common wage-making characteristics. A contour for particular occupations is defined in terms of both product market and labor market, and a contour has three dimensions: (1) particular occupations or job clusters, (2) a sector of industry, and (3) a geographic location.



APPENDIX IV

AMHERST AREA FOOD SERVICE EMPLOYMENT OPPORTUNITIES

A Telephone Survey

I. Methodology

The 1976 Amherst Chamber of Commerce Business Director and the Yellow Pages provided the names, addresses, and phone numbers of the eating establishments in the Amherst area. All the appropriate businesses were called; however, due to time constraints, owners or managers who were not available either on the first or second occasion or who were unable to provide the information requested, were not called a third time. (No claim is made that the sample was complete or that it accurately represents the total population. No random sample was generated.) Establishments surveyed included restaurants, fast food operations, and college dining services. Over 30 food service businesses provided statistical and qualitative information.

The owner or manager was asked the following questions:

1. Could you tell me the number of food preparation and service people you employ?

2. In what specific positions and how many in each position?

3. What is your turnover rate?

4. How many people have you replaced since May of 1976?

5. Do you expect to increase the number of employees in the next few years?

6. Do you think that it would be helpful for young people just getting started in the field to have a vocational food service and preparation background? Can students benefit occupationally?

7. Would the same background be useful for gaining access to higher level jobs later in their careers in the food industry?

8. Would you be willing to become involved in the planning stages of the program?

Survey Responses to Questions

Establishment	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Amherst College Food Service	25	Asst. Cook to Head Cook	0%	0	no	yes	yes	yes
Aqua Vita Restaurant	19	Busboy, waitress, dishwasher, cook	5%	1	no	yes	yes	yes
Bonanza Sirloin Pit	28-38	"Generalists"	75%	24	no	yes	yes	yes
Burger King	25-30	Cooks, counter	2%	1	yes, 5	yes	yes	yes
Chequers	30	8 full time, 3 chefs, 3 sandwich, 20 waitresses	12.5% full time, 80% kitchen/ waitresses	1 FT 20 Kitchen/ wait.	yes; 35-42	yes	yes	yes
Delano's	14	cooks, counter, bar, waitresses	50%	7	no	yes	yes	yes
Drake's The Village Inn	23	23 cooks, short order, bar, waitress	65%	15	no	yes	yes	no
The English Pub	30	8 cooks, dishwasher, prep, set-up, waiter	25%	7	no	yes	yes	no
Eric's Food Shop	4	2 full time, 2 part time general	150%	6	no	yes	yes	yes

Establishment	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Friendly Ice Cream	40	Most are part time cooks, waitresses	12.5%	5	yes, 5	yes	yes	no
Gas Lite I	10	Cooks, waitresses, dishwashers	50%	5	no	yes	yes	yes
Gas Lite II	11	cooks, waitresses, waiters, dishwashers	140%	15	no	yes	yes	yes
Goten	21	All positions	10%	2	no	yes	yes	no
Hahjee's Place	12	All positions	33%	4	no	yes	yes	yes
Howard Johnsons	16	3 food prep., 13 food service	0% food prep. 50% serv.	0 prep. 7 serv.	no	yes	yes	yes
The Hungry U II	18	cooks, bar, counter, bus people, dishwasher	33%	6	no	yes	yes	yes
Jolly Bull	15	4 food prep., 11 food service	25% prep. 45% serv.	1 prep. 5 serv.	no	yes	yes	no
Judy's	16	all positions	12.5%	2	yes	yes	yes	yes
The Lord Jeffrey Inn	34	16 wait., 4 bus., 3 bar, 1 cocktail wait.	10 kitch. staff	6	not sure	yes	no	no
McManus Eating Place	50	dishwasher, cashiers, cooks, wait.	250%	125	no	yes	yes	no

Establishment	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mill Valley Grist Mill	35	chefs, waitresses, dishwashers, bar	"low" "high"	2 11	no	yes	yes	yes
Mt. Holyoke Food Services	147	All positions	10%	15	yes, 5	yes	yes	yes
Rachid's	13	1 cook, 8 wait., 4 bartenders	20% cook/bar 75% wait.	1 6	no	yes	yes	no
The Rusty Scupper	36	4 prep., 32 serv.	8-9%	3	no	yes	yes	yes
Saga Food Services	85	All positions	15%	12	not sure	yes	yes	no
Smith College Food Services	200	All positions	10%	20	no	no	no	yes
South China Restaurant	16	8 wait., 2 bus-boys, 6 kitch.	0%	0	no	yes	yes	no
The Steak Out	28-48	waitresses, dish-washers, cooks	7%	3	no	yes	no	no
U. Mass Food Service	330	asst. cooks to management	12%	40	no	yes	yes	yes
The Whole Wheat Pizza Factory	7	cook, counter, bus	57%	4	no	yes	yes	no
The Wok	25-30	cooks, dishwashers, waitresses	very low	not sure	no	yes	yes	no
TOTALS	1363 to 1403			382				

INSTITUTE FOR GOVERNMENTAL SERVICES

UNIVERSITY OF MASSACHUSETTS

The Institute for Governmental Services was founded by the President of the University of Massachusetts and its trustees in 1970 as an expression of the University's historical commitment to public service. The Institute was charged with six goals: (1) to link the University and the State and local government agencies throughout the Commonwealth; (2) to facilitate the flow of resources from all three campuses of the University to the citizens of the Commonwealth; (3) to design, carry out, and refine University-based, service oriented programs for State and local colleges and campuses within the University; (4) to collaborate with the Institute and with each other in developing service-oriented programs; (5) to identify and obtain financial support from appropriate outside sources; and (6) to establish and maintain a collaborative, interagency relationship with a wide variety of organizations including State and local governmental agencies, other institutions of higher learning, business and industrial concerns, citizens groups, and professional organizations.

To accomplish its goals, the Institute brings academic expertise and practical experience to bear on issues effecting State and local governmental agencies. Its activities to this end fall into four main categories:

TRAINING. Through courses, conferences, and workshops, the Institute offers training to government personnel and affective approaches to familiar problems, efficient techniques for dealing with challenges brought on by changing legislation, and methods to simplify the readjustments and reorganizations generated by technological and social developments.

TECHNICAL ASSISTANCE. The Institute is available for direct advice and assistance in specific government agency and community problems, from developing viable systems models to designing curricular materials.

PUBLICATIONS. Out of Institute research, training courses, and technical assistance has come a series of publications summarizing its research, describing and evaluating its programs, and providing practical guidance. Institute publications include law compendia, policy histories, training manuals, guides, special reports, and occasional papers.

RESEARCH. The Institute undertakes surveys, investigations, and analysis in response to requests from government officials. Basic research on problems often leads to specific measures that assist in solving the problems, in the form of training programs, technical assistance, and publications.